



## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Parts 43 and 91**

**[Docket No. FAA-2023-1836; Amdt. Nos. 43-53A and 91-371A]**

**RIN 2120–AL70**

### **Inclusion of Additional Automatic Dependent Surveillance-Broadcast (ADS-B) Out Technical Standard Orders; Incorporation by Reference; Confirmation of Effective Date**

**AGENCY:** Federal Aviation Administration (FAA), U.S. Department of Transportation (DOT).

**ACTION:** Direct final rule; confirmation of effective date.

**SUMMARY:** This action confirms the December 18, 2023, effective date of the “Inclusion of Additional Automatic Dependent Surveillance-Broadcast (ADS-B) Out Technical Standard Orders; Incorporation by Reference” direct final rule published on October 17, 2023. The direct final rule amends the Automatic Dependent Surveillance-Broadcast (ADS-B) Out requirements to allow aircraft meeting the performance requirements in Technical Standard Order (TSO)-C166c (Extended Squitter Automatic Dependent Surveillance – Broadcast (ADS-B) and Traffic Information Service – Broadcast (TIS-B) Equipment Operating on the Radio Frequency of 1090 Megahertz (MHz)), or TSO-C154d, (Universal Access Transceiver (UAT) ADS-B Equipment Operating on the Radio Frequency of 978 Megahertz (MHz)) to meet the regulations. Aircraft equipped with ADS-B Out that meets the performance requirements of either TSO-C166c or TSO-C154d will provide additional information to pilots and air traffic control, including weather information, spectrum monitoring, and airspeed. They will

also enable new wake turbulence applications, enhance weather forecasting, and enable or enhance ADS-B In applications such as Flight Interval Management.

**DATES:** The effective date of December 18, 2023, for the direct final rule published October 17, 2023 (88 FR 71468) is confirmed.

*Incorporation by reference:* The incorporation by reference of certain publications listed in this rule is approved by the Director of the Office of the Federal Register as of December 18, 2023. The incorporation by reference of certain other publications listed in this rule was approved by the Director of the Office of the Federal Register as of August 11, 2010.

**ADDRESSES:** For information on where to obtain copies of rulemaking documents and other information related to this action, see “How To Obtain Additional Information” in the **SUPPLEMENTARY INFORMATION** section of this document.

**FOR FURTHER INFORMATION CONTACT:** Juan Sebastian Yanguas, Airspace Rules & Regulations, AJV-P21, Federal Aviation Administration, 800 Independence Avenue SW, Washington, DC 20591; telephone (202) 267-8783; email [Juan.S.Yanguas@faa.gov](mailto:Juan.S.Yanguas@faa.gov).

## **SUPPLEMENTARY INFORMATION:**

### **I. Background**

This action confirms the effective date of the “Inclusion of Additional Automatic Dependent Surveillance-Broadcast (ADS-B) Out Technical Standard Orders; Incorporation by Reference” direct final rule.<sup>1</sup> As of January 1, 2020, Federal Aviation Administration (FAA) regulations, codified in title 14 Code of Federal Regulations (14 CFR), §§ 91.225 and 91.227, require aircraft to equip with Automatic Dependent Surveillance-Broadcast (ADS-B) Out to operate in expressly identified airspace areas.

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<sup>1</sup> *Inclusion of Additional Automatic Dependent Surveillance-Broadcast (ADS-B) Technical Standard Orders; Incorporation by Reference* direct final rule, 88 FR 71468 (Oct. 17, 2023).

ADS-B Out equipment must meet the performance requirements in § 91.227 along with those in Technical Standard Orders (TSO)-C166b or TSO-C154c. This rule revised §§ 91.225 and 91.227 to allow aircraft with equipment that meets the performance requirements in the new TSOs, TSO-C166c and TSO-C154d, to also operate in compliance with the regulations. Specifically, to allow use of these new TSOs, the direct final rule incorporates by reference TSO-C166c, TSO-C154d, section 2 of RTCA DO-260C, RTCA DO-260C Change 1, and section 2 of RTCA DO-282C into 14 CFR 91.225 and 91.227. These new performance requirements enable new wake turbulence applications, incorporate functionality for high-altitude and high-velocity vehicles, and enhance weather forecasting. The addition of TSO-C166c and TSO-C154d to the list of permitted TSOs will not negatively affect current users because TSO-C166b and TSO-C154c will remain as acceptable performance requirements.

This rule also made minor changes to other regulatory sections of part 91. It revised § 91.215 to remove the requirement that transponders reply to intermode interrogations, as International Civil Aviation Organization (ICAO) prohibited those replies in ICAO Annex 10 Volume IV Standards and Recommended Practices and new transponder certifications do not include the capability to reply to intermode interrogations. This rule also removed the requirement in part 43, appendix F, to verify response to an intermode interrogation.

## **II. Discussion of Comments**

The FAA received one comment related to this direct final rule. AIRBUS Commercial Aircraft commented that they believed Advisory Circulars 20-165, Airworthiness Approval of Automatic Dependent Surveillance - Broadcast OUT Systems, and Advisory Circular 20-172, Airworthiness Approval for ADS-B In Systems

and Applications, covering the installation of ADS-B Out and ADS-B In, respectively, should be updated to account for TSO-C166c as part of the rulemaking.

The FAA is revising Advisory Circular 20-165B to directly address the Technical Standard Orders being incorporated by reference into FAA regulations through this rulemaking. The FAA will make the revision available for public comment through the Advisory Circular comment process prior to issuance. The existing guidance can continue to be used until the FAA issues the revised Advisory Circular.

The FAA is also revising Advisory Circular 20-172B to address Technical Standard Order C195c. However, as TSO-C195 and AC 20-172 (and later revisions) are standards and guidance for ADS-B In equipment, those publications are not applicable to this rulemaking, which pertains to rules that only require ADS-B Out systems, and this rulemaking therefore does not reference TSO-C195c or AC 20-172C.

Therefore, the effective date of the direct final rule published October 17, 2023, at 88 FR 71468 is confirmed.

### **III. How to Obtain Additional Information**

A copy of this direct final rule, the confirmation document, and all background material may be viewed online at <https://www.regulations.gov> using the docket number listed above. A copy of this direct final rule confirmation will be placed in the docket. Electronic retrieval help and guidelines are available on the website. It is available 24 hours each day, 365 days each year. An electronic copy of this document may also be downloaded from the Office of the Federal Register's website at <https://www.federalregister.gov> and the Government Publishing Office's website at <https://www.govinfo.gov>. A copy may also be found on the FAA's Regulations and Policies website at [https://www.faa.gov/regulations\\_policies](https://www.faa.gov/regulations_policies).

Copies may also be obtained by sending a request to the Federal Aviation Administration, Office of Rulemaking, ARM-1, 800 Independence Avenue SW, Washington, DC 20591, or by calling (202) 267-9677. Interested persons must identify the docket or amendment number of this rulemaking.

All documents the FAA considered in developing this rule, including economic analyses and technical reports, may be accessed in the electronic docket for this rulemaking.

Issued under authority provided by 49 U.S.C. 106(f), 40103, and 44701, in Washington, DC, on November 21, 2023.

**Brandon Roberts,**

*Executive Director, Office of Rulemaking.*

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